

August 17, 2022

Inflation Reduction Act – Energy Tax Credit and Climate-Related Funding Provisions

The Act Modifies and Expands Tax Credits for Renewable Energy Production, Clean Energy Investments and Use of Alternative Power and Fuel Sources, and it Provides Significant Funding for a Wide Variety of Programs Relating to Climate Change

SUMMARY

The Inflation Reduction Act (the “IRA”) of 2022 was passed by the Senate on August 7, 2022 and by the House of Representatives on August 12, 2022. President Biden signed the IRA into law on August 16, 2022.

The IRA is intended to put the U.S. on a path to reduce greenhouse gas emissions by 40 percent below 2005 levels by 2030 through tax credits and other budgetary appropriations aimed at incentivizing production of, and investments in, renewable energy. Among other things, the IRA makes significant changes to existing clean energy credits and creates new credits. It also provides significant funding for a wide variety of programming initiatives relating to climate change and related topics, including repealing a Trump-era freeze on offshore wind power leases. We will be sending a second memorandum to clients in the coming days discussing the investment opportunities and practical implications of these changes in law on transactions involving renewable energy and the energy transition.

First, under the IRA, tax credits may now be refundable for tax-exempt entities (and, for certain credits, for taxable entities as well), and non-tax-exempt taxpayers can now transfer the tax credits to unrelated parties for cash. Also, the IRA creates a variety of new energy tax credits, including those that will replace in 2024 the existing production tax credit and investment tax credit. Finally, the IRA extends the dates on which qualified facilities or properties must begin their construction or be placed in service, and it contains changes to the credit amounts and the requirements to qualify for those credits.

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Important features of the energy tax credit and other climate-related provisions of the IRA are outlined below. For a discussion of other key provisions of the IRA, see our [other publications](#). The energy tax credit provisions of the IRA are similar to the proposed provisions under the Build Back Better Act, which was proposed and passed by the House in November 2021 but has remained stalled in the Senate. A discussion of the Build Back Better Act is available [here](#).

DISCUSSION¹

A. CREDIT MONETIZATION

1. Direct pay

Together with the new transferability features, the IRA's direct pay provisions provide additional means for monetizing the energy-related tax incentives under the IRA. Section 6417 under the Internal Revenue Code (the Sections henceforth refer to the Internal Revenue Code) allows "applicable entities" to make an election to treat "applicable credits" as a direct payment of tax by such entity for the taxable year with respect to which such credit was determined.² If the applicable entity is a partnership or an S corporation, the election is made at the partnership or S corporation level.³ If the Secretary of the Treasury (the "Secretary") determines the election constitutes an "excessive payment" (a payment in excess of the amount of credit which would otherwise be allowable), a penalty of up to 20 percent of such excessive payment amount may apply to such taxpayer.⁴ As applicable entities are generally limited to tax-exempt entities (as discussed further below), this provision allows tax-exempt entities to utilize and monetize the tax credits via a refund, even though such entities generally do not incur tax liabilities.

"Applicable credits" include those under Sections 30C (alternative fuel vehicle refueling property), 45 (renewable electricity production), 45Q (carbon oxide sequestration), 45U (zero-emissions nuclear power production), 45V (clean hydrogen production), 45W (qualified commercial vehicles for tax-exempt entities), 45X (advanced manufacturing production), 45Y (clean electricity production), 45Z (clean fuel production), 48 (energy), 48C (advanced energy project), and 48E (clean electricity investment).⁵ "Applicable entities" generally includes only tax-exempt entities, such as tax-exempt organizations, state and local governments, and Indian Tribal governments.⁶ However, for the first five years of the Sections 45V (clean hydrogen production), 45Q (carbon oxide sequestration), and 45X (advanced manufacturing production) credits, any taxpayer may elect for direct payment with regard to such credits.⁷ Elections with regards to credits under Sections 45, 45Q, 45V, and 45Y are made on a facility-by-facility basis, and are made in the year that the applicable asset is placed in service.⁸ The applicable credits may be carried back for three years (instead of one year for general business credits), and unused credits are allowed to be carried forward 22 years (instead of 20 years for general business credits).⁹

2. Transferability

Section 6418 allows an “eligible taxpayer” to transfer all or a portion of “eligible credits” to a “transferee taxpayer”.¹⁰ Any taxpayer, other than an “applicable entity” under Section 6417(d)(1)(A) (tax-exempt entities),¹¹ may be an “eligible taxpayer”. If an eligible taxpayer is a partnership or an S corporation, the election is made at the partnership or S corporation level.¹² Unless the transferee taxpayer is related to the eligible taxpayer under Section 267(b) or 707(b)(1), there are no limitations on a “transferee taxpayer”.¹³ A transferee taxpayer need not have a trade or business or otherwise be involved in the renewable energy industry. Although an “applicable entity” under Section 6417 that may monetize such credits cannot transfer credits under Section 6418, it can be a transferee of such credits (and, apparently, then make a Section 6417 election in respect of such transferred credits).

“Eligible credits” include those under Sections 30C (alternative fuel vehicle refueling property), 45 (renewable electricity production), 45Q (carbon oxide sequestration), 45U (zero-emissions nuclear power production), 45V (clean hydrogen production), 45X (advanced manufacturing production), 45Y (clean electricity production), 45Z (clean fuel production), 48 (energy), 48C (advanced energy project), and 48E (clean electricity investment)—the same as those to which the direct payment election applies, except it excludes Section 45W (qualified commercial vehicles for tax-exempt entities) credits.¹⁴ Eligible credits may not be transferred more than once.¹⁵

Payments for the transfer must be made in cash and are not included in the gross income of the selling taxpayer, nor are they deductible by the transferee taxpayer.¹⁶ However, such payments are not listed as types of income or deductions excluded for the purpose of determining the corporate minimum tax under the IRA, and barring any additional regulations by the Treasury, would apparently still increase the income of the transferor and decrease the income of the transferee for the purpose of determining such corporate minimum tax (although any amount treated as a payment under Section 6417 would be disregarded for such purposes).¹⁷ The election to transfer must be made by the due date (including extension) for the tax return for the year in which such credit is determined and may not be revoked.¹⁸ If the Secretary determines there is an excessive transfer to the transferee taxpayer (a transfer of credit in excess of what the transferor could properly claim), a penalty up to 20 percent of such excessive credit transfer amount may apply to such transferee taxpayer.¹⁹

B. NEW TAX CREDITS

1. Advanced manufacturing production tax credit under Section 45X

The IRA introduces a new tax credit for advanced manufacturing production of eligible components that are produced and sold in the course of a taxpayer’s business to an unrelated person.²⁰ The credit amounts are determined based upon the type of eligible component.²¹ Eligible components include solar and wind energy components, inverters, qualifying battery components, and applicable critical minerals.²² These credit amounts are generally phased-out for eligible components sold after 2029, with the credit amounts

decreasing in 25 percent increments per year through 2032 and reaching zero for eligible components sold after December 31, 2032.²³ The phase out does not apply to applicable critical minerals.²⁴ Only eligible components produced in the United States or in a possession of the United States will qualify for the credit.²⁵

The IRA defines the sale to an unrelated person requirement by reference to the single employer rules under the regulations prescribed under Section 52(b).²⁶ Eligible components will be treated as having been sold to an unrelated person if such components are integrated, incorporated, or assembled into another eligible component which is then sold to an unrelated person.²⁷

2. Clean hydrogen production tax credit under Section 45V

The IRA adds a new tax credit for the production of qualified clean hydrogen, which must be produced through a process that results in lifecycle greenhouse gas emissions, as defined in the Clean Air Act, through the point of production of no more than four kilograms of CO₂e per kilogram of hydrogen.²⁸ The qualified clean hydrogen must be produced in the United States or in a possession of the United States in the ordinary course of a trade or business of the taxpayer for sale or use, for which the production and sale or use must be verified by an unrelated party.²⁹

The amount of the base credit is equal to the amount of qualified clean hydrogen produced multiplied by \$0.60 multiplied by the applicable percentage.³⁰ The applicable percentage depends upon the lifecycle greenhouse gas emissions of the produced qualified clean hydrogen: 20 percent for 2.5–4 kg of CO₂e, 25 percent for 1.5–2.5 kg of CO₂e, 33.4 percent for 0.45–1.5 kg of CO₂e, and 100 percent for less than 0.45 kg of CO₂e.³¹ The \$0.60 amount is subject to inflation adjustments.³² The increased credit, which is five times the base credit, is available for a qualified clean hydrogen production facility if it meets certain prevailing wage and apprenticeship requirements, or if construction of the facility begins within 60 days after the Secretary publishes guidance on the prevailing wage and apprenticeship requirements.³³ A producer of hydrogen for which a lifecycle greenhouse gas emissions rate has not been determined may file a petition with the Secretary to determine such rate.³⁴ The inclusion of “use”, in addition to “sale”, is significant, since it allows taxpayers to claim a production tax credit (“PTC”) for producing qualified clean hydrogen even if the clean hydrogen is not sold to an unrelated party, which had previously been a requirement to claim the PTC.

The qualified clean hydrogen must be produced at a qualified clean hydrogen production facility within 10 years of the facility being placed into service.³⁵ Qualified clean hydrogen production facilities must be owned by the taxpayer, produce qualified clean hydrogen, and begin construction before January 1, 2033.³⁶ The qualified clean hydrogen production credit will not be allowed for facilities that include carbon capture equipment for which a credit is allowed under Section 45Q under the current or any prior taxable year.³⁷

3. Clean electricity PTC under Section 45Y

The IRA adds a new credit for clean electricity production,³⁸ which is expected to replace the existing PTC described further below for qualified facilities that are placed in service after December 31, 2024. The amount of the credit is equal to the kilowatt hours of electricity produced by the taxpayer at a qualified facility that is either sold to an unrelated person or, in the case of a qualified facility which is equipped with a metering device owned and operated by an unrelated person, sold, consumed, or stored by the taxpayer, multiplied by the applicable amount for such facility.³⁹

The base applicable amount is 0.3 cents.⁴⁰ The increased credit of 1.5 cents is available if a qualified facility meets the prevailing wage and apprenticeship requirements, if the facility has a maximum net output of less than one megawatt, or if construction of the facility begins before 60 days after the Secretary publishes guidance on the prevailing wage and apprenticeship requirements.⁴¹

A qualified facility must be used for the generation of electricity, be placed into service after December 31, 2024, and have a greenhouse gas emissions rate no greater than zero.⁴² The credit will phase out for facilities, the construction of which begins during the second or third year after the later of 2032 and the year in which the Secretary determines that the annual greenhouse gas emissions from the production of electricity in the United States are less than or equal to 25 percent of the annual greenhouse gas emissions from the production of electricity in the United States, and will not be available for facilities, the construction of which begins after the third year following such year.⁴³

4. Clean electricity investment tax credit under Section 48E

The IRA adds a credit for clean electricity investment equal to the applicable percentage of the qualified investment in any qualified facility or energy storage technology,⁴⁴ which is expected to replace the existing investment tax credit (the “ITC”) described further below for qualified facilities and energy storage technology that are placed in service after December 31, 2024. A qualified facility is a facility that is used for the generation of electricity, is placed into service after December 31, 2023, and for which the anticipated greenhouse gas emissions rate is not greater than zero.⁴⁵ A qualified facility generally does not include facilities for which other energy tax credits are available.⁴⁶

The base rate for the applicable percentage for a qualified facility or energy storage technology is six percent.⁴⁷ The increased credit rate of 30 percent is available if either the qualified facility meets the prevailing wage and apprenticeship requirements, or construction of the qualified facility begins before 60 days after the date that guidance is published with respect to the prevailing wage and apprenticeship requirements, or if the facility has a maximum net output of less than one megawatt.⁴⁸ A qualified investment with respect to a qualified facility or energy storage technology placed in an energy community will have its applicable rate increased to 40 percent if the facility or technology qualifies for the 30 percent increased credit rate, or increased to eight percent if the facility or technology is subject to the base rate of six percent.

The credit will phase out for facilities the construction of which begins during the second or third year after the later of 2032 and the year in which the Secretary determines that the annual greenhouse gas emissions from the production of electricity in the United States is less than or equal to 25 percent of the annual greenhouse gas emissions from the production of electricity in the United States, and will not be available for facilities the construction of which begins after the third year following such year.⁴⁹

5. Nuclear power PTC under Section 45U

The IRA introduces a new credit for zero-emission nuclear power production equal to the amount by which the product of 0.3 cents multiplied by the kilowatt hours of electricity produced at a qualified nuclear facility and sold to an unrelated person exceeds the reduction amount.⁵⁰ The increased credit rate of 1.5 cents is available if the qualified facility meets the prevailing wage requirements.⁵¹

A qualified nuclear facility is a facility owned by the taxpayer that uses nuclear energy to produce electricity, is placed in service before the enactment of the IRA, and is not an advanced nuclear power facility (as defined in Section 45J).⁵² The reduction amount is 16 percent of the excess of the gross receipts of any electricity produced by the facility sold to an unrelated person over the product of 2.5 cents multiplied by the kilowatt hours of electricity produced and sold to an unrelated person, or 0.3 cents multiplied by the kilowatt hours of electricity produced and sold to an unrelated person, whichever is lesser.⁵³ Amounts received from a zero-emission credit program with respect to the qualified nuclear power facility may count as gross receipts for the purposes of the reduction amount.⁵⁴

6. Energy efficiency home improvement tax credit

The IRA provides a wide range of direct consumer incentives to buy energy efficient appliances and heat pumps, to install rooftop solar, and to invest in home energy efficiency. The IRA extends the Energy Efficiency Home Improvement credit through 2032, and increases the credit from 10 percent to 30 percent up to a maximum of \$1,200 per year for the next 10 years. Consumers that purchase qualified commercial clean vehicles⁵⁵ are also eligible for up-front tax credits of up to \$4,000 for used electric and hybrid vehicles and up to \$7,500 for the purchase of new zero emission vehicles that are made in North America. Rewiring America, an electrification-focused nonprofit organization, estimates that the consumer incentives could save American households up to \$1,800 per year on energy bills.⁵⁶

C. EXISTING TAX CREDITS

The IRA's credit structure generally provides for a base credit and an increased credit that is up to five times the base credit if certain requirements are met (with an exception). This is similar to the provision under the Build Back Better Act proposed and passed by the House in November 2021 and is stalled in the Senate.

1. Production tax credit

The IRA expands and extends the PTC, which has historically been available to the owners of renewable generation projects in the U.S., but was in the process of being phased out for certain technologies. For the PTC, the IRA allows taxpayers to claim a base credit of 0.3 cents per kilowatt-hour and an increased credit of 1.5 cents per kilowatt-hour for qualifying facilities.⁵⁷ Qualified facilities are those producing electricity from certain renewable resources, including wind, solar, geothermal, hydropower, hydrokinetic, biomass, landfill gas, and municipal solid waste.⁵⁸ Generally, in order to claim the PTC under the IRA, qualified facilities must be placed in service after December 31, 2021, and construction of qualified facilities must begin prior to January 1, 2025, rather than prior to January 1, 2022 (which was the deadline under previous law).⁵⁹ As noted above, the existing PTC is replaced by the new tech-neutral clean energy PTC under Section 45Y for qualified facilities that are placed in service after December 31, 2024.⁶⁰

The increased credit is available if a qualified facility meets the prevailing wage and apprenticeship requirements with respect to laborers or mechanics employed by the taxpayer (and any contractor or subcontractor) in the construction, alteration, or repair of the qualified facility.⁶¹ However, even if the facility does not meet the prevailing wage and apprentice requirements, the increased credit is still available if the facility has a maximum net output of less than one megawatt, or if construction of the facility begins within 60 days after the Secretary publishes guidance on prevailing wage and apprenticeship requirements.⁶²

The credit is further increased by 10 percent if a qualified facility meets the domestic content requirements, which generally require that a certain percentage of the total cost of the components (i.e., steel, iron, and manufactured products) be mined, produced, or manufactured in the United States (20 percent for offshore wind facilities; 40 percent for most other facilities).⁶³ The Secretary must provide exceptions to the requirements if the requirement would increase the overall costs of construction of qualified facilities by more than 25 percent, or if the relevant components are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality.⁶⁴

The credit is also further increased by 10 percent if the qualified facility is located in an energy community.⁶⁵ Notably, the IRA's definition of "energy community" includes brownfield sites, census tracts where a coal mine has closed or a coal-fired electric generating unit has been retired, and areas with both (i) specified minimum percentages of direct employment or local tax revenues related to the extraction, processing, transport, or storage of coal, oil, or natural gas, and (ii) an unemployment rate at or above the national average for the previous year.⁶⁶ Although these provisions are intended to incentivize construction of qualified facilities in energy communities, including locations with current or previous traditional energy operations, a taxpayer that is considering building a qualified facility in an energy community will need to evaluate whether the tax credits offered under these provisions would offset the likely costs of remedying potential historical issues, including pollution and environmental contamination.

Thus, for a project that meets the requirements for the increased credit and the “domestic content” and “energy community” enhancement requirements, the total credit would be equal to 1.8 cents per kilowatt-hour.

With respect to the reduction of the credit for projects financed by tax-exempt bonds, the IRA modifies the formula for calculating the credit amount so that the amount that can be claimed is further reduced.⁶⁷

Under previous law, the rate for credits produced by qualified hydroelectric production and marine and hydrokinetic renewable energy was reduced by 50 percent of the amount of credit other qualifying facilities would earn. The IRA eliminates this reduction so that, going forward, hydroelectric and marine and hydrokinetic renewable energy facilities will be eligible to earn the full PTC.⁶⁸

2. Investment tax credit

The IRA allows taxpayers to claim a base credit of six percent for qualified fuel cell, solar energy, small wind energy, and waste energy recovery properties (and two percent for all other energy properties) and an increased credit of 30 percent (or 10 percent for all other energy properties) if the energy project meets certain other requirements.⁶⁹ Generally, energy property must be placed in service after December 31, 2021, and construction must begin prior to January 1, 2025 rather than the prior deadline of January 1, 2024.⁷⁰ For projects that began construction after December 31, 2019 and were placed in service before January 1, 2022, the credit is increased to a flat 26 percent and would not be subject to the phase-out schedule under previous law.⁷¹ As noted above, the existing ITC is replaced by the new tech-neutral clean energy ITC under Section 48E for qualified facilities that are placed in service after December 31, 2024.⁷²

The IRA also extends the six percent base credit to equipment using the ground or groundwater as a thermal energy source (with a phasedown),⁷³ equipment used in generating electricity by geothermal power;⁷⁴ energy storage technology,⁷⁵ qualified biogas property converting biomass into a gas consisting of at least 52 percent methane that is captured for sale or productive use,⁷⁶ microgrid controllers,⁷⁷ fuel cell power plants with linear generators with a nameplate capacity of at least one kilowatt-hour⁷⁸ and dynamic glass.⁷⁹ Notably, energy storage technology is defined broadly under the IRA to include property that receives, stores, and delivers energy and has a minimal capacity of at least five kilowatt hours, as well as thermal energy storage property, with the ITC being available even if the energy stored is not fully generated by renewable energy sources. In addition, the IRA expands the definition of “energy property” to include amounts paid or incurred for qualified interconnection property in connection with the installation of energy property with a maximum net output of not greater than five megawatts.⁸⁰

Similar to the PTC, the increased credit is available if an energy project (i.e., a project consisting of one or more energy properties that are part of a single project) meets certain prevailing wage and apprenticeship requirements,⁸¹ if the project has a maximum net output of less than one megawatt, or if construction of the

project begins within 60 days after the date the Secretary publishes guidance on the prevailing wage and apprenticeship requirements.⁸²

The credit for energy projects placed in service within an energy community is increased by two percent (to a total eight percent credit) if the project meet the domestic content requirements, or by 10 percent (to a total 40 percent credit) if the project also meets the prevailing wage and apprenticeship requirements along with the domestic content requirements.⁸³

With respect to the reduction of the credit for projects financed by tax-exempt bonds, the same formula as applied to the PTC is applicable.⁸⁴

The IRA expands the ITC to include solar and wind facilities that are located in low-income communities or on “Indian land” (as defined in the Energy Policy Act) and that receive an allocation of environmental justice solar and wind capacity limitation.⁸⁵ The allocation is subject to an annual capacity limitation of 1.8 gigawatts direct-current capacity for 2023 and 2024, and zero thereafter, increased by any unused credit allocations from prior years.⁸⁶ However, unlike the proposed Build Back Better Act, the IRA does not expand the ITC to include transmission assets. However, as discussed below, the IRA does authorize government spending through DOE to create, facilitate, or incentivize various electric transmission projects, including DOE loans for the construction or modification of certain electric transmission facilities.

3. Carbon oxide sequestration tax credit

For carbon oxide stored in secure geological storage and not used by the taxpayer, the base credit is \$17 per metric ton, and the increased credit is \$85 per metric ton.⁸⁷ For carbon oxide used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project, the base credit is \$12 per metric ton, and the increased credit is \$60 per metric ton.⁸⁸ For carbon dioxide captured using direct air carbon capture equipment placed in service after December 31, 2022, the IRA provides for the base credit of \$36 per metric ton, and the increased credit of \$180 per metric ton of carbon oxide stored in secure geological storage and not used by the taxpayer, and the base credit of \$26 per metric ton, and the increased credit of \$130 per metric ton for carbon oxide used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project.⁸⁹

For the purposes of the carbon oxide sequestration tax credit, construction of a qualified facility must begin prior to January 1, 2033, by which date either the construction of carbon capture equipment must begin or the original planning and design for such facility must include installation of carbon capture equipment.⁹⁰ The minimum capture requirements are lowered to (i) 1,000 metric tons for direct air capture facilities, (ii) 18,750 metric tons for electricity generating facilities, and (iii) to 12,500 for all other facilities.⁹¹ The IRA modifies the allowance of the credit to carbon capture equipment placed in service prior to February 9, 2018 to carbon captured by no later than January 1, 2023.⁹² The IRA imposes a new requirement that carbon capture equipment at an electricity generating facility must have a capture design capacity of not less than

75 percent of the baseline carbon oxide production for the principal electricity generating unit for which the carbon capture equipment is designed.⁹³

Similar to the ITC and the PTC, the increased credit amount is available for a qualified facility if it meets certain prevailing wage and apprenticeship requirements, or if construction of the carbon capture equipment or the qualified facility begins within 60 days after the Secretary publishes guidance on the prevailing wage and apprenticeship requirements.

With respect to the reduction of the credit for projects financed by tax-exempt bonds, the same formula as applied to the PTC is applicable.⁹⁴

The IRA provides an election for a taxpayer to elect to begin the 12-year credit period on the first day of the first taxable year in which the credit is claimed with respect to such equipment rather than the date that the equipment was placed in service if (i) no credit has been claimed with respect to such carbon capture equipment in a prior taxable year, (ii) the qualified facility is located in an area affected by a federally declared disaster after the equipment is originally placed in service, and (iii) the federally declared disaster caused a cessation of operations of the qualified facility or the equipment.⁹⁵

D. GOVERNMENT FUNDING AND OTHER NON-TAX INCENTIVES FOR ENVIRONMENTAL PROJECTS

1. Funding provisions

In addition to tax credits, the IRA provides funding to various federal agencies for a variety of climate-related or other environmental programs that are aimed at reducing greenhouse gas emissions, addressing the impact of climate change on disadvantaged communities, enhancing energy and water efficiency, supporting conservation, incentivizing the use and production of clean energy, increasing climate and water resiliency, and protecting biodiversity.

These funding provisions include:

- \$27 billion in funding to the Environmental Protection Agency (the “EPA”) to establish a greenhouse gas reduction fund⁹⁶ and to support several programs that provide financial incentives to reduce greenhouse gas emissions and other air pollution emissions, including incentives to
 - replace eligible medium-duty vehicles (e.g., school buses) and heavy-duty vehicles (e.g., garbage trucks) with zero-emission vehicles;⁹⁷
 - purchase or install equipment and technology to reduce pollution at ports;⁹⁸
 - identify and reduce emissions from diesel engines;⁹⁹
 - monitor air pollution and greenhouse gases;¹⁰⁰
 - encourage states to adopt and implement greenhouse gas and zero-emission standards for mobile sources; and¹⁰¹

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- reduce methane emissions from petroleum and natural gas systems.¹⁰²
- \$3 billion in funding to the EPA for environmental and climate justice block grants that benefit disadvantaged communities.¹⁰³
- \$1 billion in funding to the Department of Housing and Urban Development for loans and grants to fund projects that address affordable housing and climate change issues, such as projects designed to increase the energy or water efficiency of affordable housing.¹⁰⁴
- Over \$19.5 billion in funding to the Department of Agriculture (USDA) over the course of the next four years¹⁰⁵ for a variety of programs related to conservation and renewable energy, including funding for
 - voluntary conservation programs, such as the environmental quality incentives program, the conservation stewardship program, the agricultural conservation easement program, and the regional conservation partnership program;
 - USDA's Natural Resources Conservation Service with respect to (i) conservation technical assistance and (ii) a program to quantify carbon sequestration and carbon dioxide, methane, and nitrous oxide emissions;¹⁰⁶
 - rural development programs, such as the Rural Energy for America Program, that support the generation, storage, and use of renewable energy in rural communities; and¹⁰⁷
 - programs that award grants to owners of state or private forests for climate mitigation, forest resilience, or related activities.
- \$297 million in funding to the Department of Transportation for a program that awards grants for projects that (i) produce, transport, blend, or store sustainable aviation fuel; or (ii) develop, demonstrate or apply low-emission aviation technologies, which, together with the direct pay provisions applicable under Section 30C, as discussed above, incentivizes production and use of alternative fuels.¹⁰⁸
- \$3.31 billion in funding the National Oceanic and Atmospheric Administration (the "NOAA") to prepare coastal communities for extreme storms and other changing climate conditions.¹⁰⁹
- Funding to the Department of Energy (DOE) for a variety of programs concerning energy rebates, energy efficiency in buildings, electric transmissions, advanced industrial facilities, and other energy matters, including
 - \$5.8 billion of financing for energy infrastructure projects, including projects to replace nonoperational energy infrastructure or reduce the emissions of energy infrastructure;¹¹⁰
 - Up to \$40 billion for specified DOE loan programs, such as certain loans issued under the Energy Policy Act of 2005, loans for facilities that manufacture advanced vehicles that emit either a low amount of, or no amount of, greenhouse gas emissions, and loans for the domestic production of efficient hybrid, plug-in electric hybrid, plug-in electric drive, and hydrogen fuel cell electric vehicles;¹¹¹
 - \$4.3 billion in federal grants to implement a HOMES rebate program, which allows state energy offices to use the grant funding to provide rebates for qualified electrification projects in low- or moderate-income households; and¹¹²
 - \$1 billion in federal grants to states and local governments to adopt and implement building codes for (i) residential buildings that meet or exceed the 2021 International Energy

Conservation Code, or (ii) commercial buildings that meet or exceed the ANSI/ASHRAE/IES Standard 90.1—2019.¹¹³

- \$2.76 billion in funding to DOE for a program that provides loans for the construction or modification of electric transmission facilities that are located within a national interest electric transmission corridor, along with authorization for the DOE to make grants to facilitate the siting of interstate electricity transmission lines.¹¹⁴
- \$100 million in funding to DOE for interregional and offshore wind electricity transmission planning, modeling, and analysis.¹¹⁵
- \$5.812 billion in funding for DOE's Office of Clean Energy Demonstrations to carry out the advanced industrial facilities deployment program.¹¹⁶ Under the program, the office must deploy advanced industrial technology to accelerate the reduction and elimination of greenhouse gas emissions at industrial facilities.
- Nearly \$2.42 billion in funding for other energy matters, such as infrastructure projects for DOE's national laboratories as well as efforts to increase the availability of high-assay low-enriched uranium, a fuel used in advanced nuclear reactors.¹¹⁷ The funding, dedicated in part to the Office of Nuclear Energy, complements the nuclear power PTC discussed above. Under its preliminary assessment, the Rhodium Group projects that the nuclear provisions in the bill are likely to "keep much, if not all" of the nation's at-risk nuclear reactors (estimated to be between 22 percent to 38 percent of reactors) online through the 2030s.
- \$365 million in funding to the DOE, the Federal Energy Regulatory Commission, and Interior for environmental reviews.¹¹⁸
- Over \$3 billion in funding to the U.S. Postal Service for purchasing zero-emission delivery vehicles and installing related infrastructure.¹¹⁹
- Authorization, until September 30, 2026, for the Federal Emergency Management Agency to provide assistance under the Robert T. Stafford Disaster Relief and Emergency Assistance Act for costs associated with low-carbon building materials as well as incentives that encourage low-carbon and net-zero energy projects.¹²⁰

2. Leasing of public lands for energy projects

The IRA also includes provisions related to the lease of public lands that are aimed at incentivizing development of clean energy, while potentially increasing the costs for oil and gas businesses. In addition to PTC increases for offshore wind facilities, the IRA provides for the lease of federal land in the Outer Continental Shelf (OCS) for offshore wind development.¹²¹ Specifically, the Department of the Interior may issue leases, easements, and rights-of-way in the OCS to produce, transport, store, or transmit energy from sources other than oil and gas (e.g., offshore wind energy sources) in land areas previously withdrawn from leasing. In contrast, the IRA increases the minimum royalty rates for oil and gas leases on federal land and offshore land in the OCS.¹²² It also increases rental rates and minimum bidding standards for onshore oil and gas leases and establishes a new fee that must be paid by any person who nominates public lands for such leasing. Further, it requires royalties to be paid for methane gas extracted from federal lands.¹²³ However, for the first 10 years following the bill's enactment, the government would only be permitted to grant new offshore wind leases if, during the prior year, the government offered at least 60 million acres in oil and gas lease sales.¹²⁴ The IRA's offshore wind provisions will operate in tandem with the Federal-State

Offshore Wind Implementation Partnership,¹²⁵ which aims to produce 30 gigawatts of offshore wind by 2030.

3. Environmental data

In addition, the IRA provides funding for governmental projects that could make available better data for companies to assess and potentially disclose their exposure to physical risks in various geographical areas.¹²⁶ These include funding for the United States Geological Survey to produce, collect, disseminate, and use 3D elevation data;¹²⁷ funding to the Council on Environmental Quality to (1) collect data related to environmental and climate issues, (2) track disproportionate burdens and cumulative impacts, and (3) support efforts to ensure that any mapping or screening tool is accessible to community-based organizations and community members.¹²⁸

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ENDNOTES

- 1 The “IRC” citations contained herein refer to Internal Revenue Code sections amended by the [IRA](#)
- 2 IRC § 6417(a).
- 3 IRC § 6417(c)(1).
- 4 IRC § 6417(d)(6).
- 5 IRC § 6417(b).
- 6 IRC § 6417(d)(1)(A).
- 7 IRC § 6417(d)(1)(B), (C), (D).
- 8 IRC § 6417(d)(3).
- 9 IRC § 39(a).
- 10 IRC § 6418(a).
- 11 IRC § 6418(f)(2).
- 12 IRC § 6418(c).
- 13 IRC § 6418(a).
- 14 IRC § 6418(f)(1).
- 15 IRC § 6418(e)(2).
- 16 IRC § 6418(b).
- 17 IRC § 56A.
- 18 IRC § 6418(e)(1).
- 19 IRC § 6418(g)(2).
- 20 IRC § 45X(a).
- 21 IRC § 45X(b)(1).
- 22 IRC § 45X(c)(1).
- 23 IRC § 45X(b)(3)(B).
- 24 IRC § 45X(b)(3)(C).
- 25 IRC § 45X(d)(2).
- 26 IRC § 45X(d)(1).
- 27 IRC § 45X(d)(4).
- 28 IRC § 45V(a), (c)(1), (c)(2). CO_{2e} means the carbon dioxide equivalent of any greenhouse gas based on relative global warming potential. IRC § 47Z(d)(2).
- 29 IRC § 45V(c)(2)(B).
- 30 IRC § 45V(a).
- 31 IRC § 45V(b)(2).
- 32 IRC § 45V(b)(3).
- 33 IRC § 45V(e).
- 34 IRC § 45V(c)(2)(C).
- 35 IRC § 45V(a)(1).

ENDNOTES (CONTINUED)

- 36 IRC § 45V(c)(3).
- 37 IRC § 45V(d)(2).
- 38 IRC § 45Y.
- 39 IRC § 45Y(a)(1).
- 40 IRC § 45Y(a)(2)(A).
- 41 IRC § 45Y(a)(2)(B).
- 42 IRC § 45Y(b)(1).
- 43 IRC § 45Y(d).
- 44 IRC § 48E(a)(1).
- 45 IRC § 48E(b)(3)(A).
- 46 IRC § 48E(b)(3)(C).
- 47 IRC § 48E(a)(2)(A)(i), (a)(2)(B)(i).
- 48 IRC § 48E(a)(2)(A)(ii), (a)(2)(B)(ii).
- 49 IRC § 48E(e).
- 50 IRC § 45U(a).
- 51 IRC § 45U(d)(1).
- 52 IRC § 45U(b)(1).
- 53 IRC § 45U(b)(2)(A).
- 54 IRC § 45U(b)(2)(B).
- 55 Qualified commercial clean vehicles must meet certain requirements under the IRA, including, but not limited to (1) a vehicle acquired for use or lease and not for resale, a vehicle that is used primarily on public streets, roads, and highways (rather than rail), meets certain electric motor requirements. IRC § 45W(c).
- 56 *The Electric Explainer: Key programs in the Inflation Reduction Act and what they mean for Americans*, Rewiring America, <https://www.rewiringamerica.org/policy/inflation-reduction-act> (last visited Aug. 15, 2022).
- 57 IRC § 45(a)(1), (b)(2), (b)(6)(A).
- 58 IRC § 45(d)(1), (d)(2)(A), (d)(3)(A), (d)(4), (d)(6), (d)(7), (d)(9), (d)(11)(B).
- 59 IRC § 45(d).
- 60 IRC § 45Y.
- 61 IRC § 45(b)(7), (b)(8).
- 62 IRC § 45(b)(6)(B).
- 63 IRC § 45(b)(9).
- 64 IRC § 45(b)(6)(B).
- 65 IRC § 45(b)(11)(A).
- 66 IRC § 45(b)(11)(B).
- 67 IRC § 45(b)(3).
- 68 IRC § 45(b)(4)(A).

ENDNOTES (CONTINUED)

- 69 IRC § 48(a)(2)(A), (a)(9).
- 70 IRC § 48(a)(2)(A)(i)(II), (a)(3)(A)(ii), (a)(3)(A)(vii), (c)(1)(D), (c)(2)(D), (c)(3)(A)(iv), (c)(4)(C), (c)(5)(D). For equipment using the ground or ground water as a thermal energy source, the qualified property must be placed in service after December 31, 2021, and the construction must begin before January 1, 2033 for the six percent base credit. IRC § 48(a)(7).
- 71 IRC § 48(a)(6).
- 72 IRC § 48D.
- 73 IRC § 48(a)(7).
- 74 IRC § 48(a)(2)(A)(i)(II).
- 75 IRC § 48(a)(2)(A)(i), (a)(3)(A), (c)(6)(A)(i).
- 76 IRC § 48(a)(2)(A)(i), (a)(3)(A), (c)(7).
- 77 IRC § 48(a)(2)(A)(i), (a)(3)(A), (c)(8).
- 78 IRC § 48(c)(1).
- 79 IRC § 48(a)(3)(A)(ii).
- 80 IRC § 48(a)(8).
- 81 IRC § 48(a)(10), (a)(11).
- 82 IRC § 48(a)(9)(B).
- 83 IRC § 48(a)(12)(C), (a)(14).
- 84 IRC § 48(a)(4).
- 85 IRC § 48(e).
- 86 IRC § 48(e)(4).
- 87 IRC § 45Q(b)(1), (h)(1).
- 88 IRC § 45Q(b)(1), (h)(1).
- 89 IRC § 45Q(b)(1)(B)-(C), (h)(1).
- 90 IRC § 45Q(d)(1).
- 91 IRC § 45Q(d)(2).
- 92 IRC § 45Q(g).
- 93 IRC § 45Q(d)(2)(B)(ii).
- 94 IRC § 45Q(f)(8). The IRA took the opportunity to correct the incorrect numbering of the second paragraph § 45Q(f)(8).
- 95 IRC § 45Q(f)(9).
- 96 The “CAA” citations contained herein refer to Clean Air Act sections amended by the IRA. CAA § 134(a).
- 97 CAA § 134(B).
- 98 CAA § 133.
- 99 IRA § 60104.
- 100 IRA §§ 60105(a)-(c).
- 101 IRA § 60105(g).

ENDNOTES (CONTINUED)

- 102 CAA § 136.
- 103 CAA § 138(a).
- 104 IRA § 30002(a).
- 105 IRA § 21001(a).
- 106 IRA § 21002.
- 107 The “FSRI” citations contained herein refer to the Farm Security and Rural Investment Act of 2022 sections amended by the IRA. FSRI § 9003(h).
- 108 IRA § 40007.
- 109 IRA § 40001-40006.
- 110 IRA § 50144; The “EPA” citations contained herein refer to sections of the Energy Policy Act of 2005 amended by the IRA. EPA § 1706.
- 111 IRA § 50141(a).
- 112 IRA §§ 50121(a), (c).
- 113 IRA § 50131(b)(1)(B).
- 114 IRA §§ 50151-50152.
- 115 IRA § 50153.
- 116 IRA § 50161.
- 117 IRA §§ 50171-50173.
- 118 IRA §§ 50301-50303.
- 119 IRA §§ 70002-70003.
- 120 IRA § 70006.
- 121 IRA § 50264.
- 122 IRA § 50263.
- 123 IRA § 50263.
- 124 IRA § 50265(b)(2)(B).
- 125 The Federal-State Offshore Wind Implementation Partnership includes Connecticut, Rhode Island, Massachusetts, New York, Delaware, Maryland, Maine, New Hampshire, New Jersey, North Carolina, and Pennsylvania.
- 126 The IRA’s provisions addressing physical risk in particular geographic locations are similar to disclosure requirements proposed by the SEC on March 21, 2022, which would require companies to disclose properties, identified geographically by zip code, subject to physical risks due to climate change. More information on the SEC’s proposal is available in S&C’s [memo](#).
- 127 IRA § 50271.
- 128 IRA §§ 60401-60402.

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